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which is a continuation-in-part of copending application Serial No. 08/026,393 filed March 4, 1993, which issued as U.S. Patent No. 5,612,487, which itself is a continuation-in-part of Serial No. 07/750,049 filed August 26, 1991 (now abandoned). This application is also a continuation-in-part of application Serial No. 08/156,508 filed November 23, 1993, which issued as U.S. Patent No. 5,484,719 January 16, 1996. Applicants incorporate herein by reference the specification of each of the above-mentioned applications.--

IN THE CLAIMS

It is respectfully requested that the following claims be entered for consideration.

Please cancel claims 2-72.

Please add the following new claims 73-98:

73.

A transgenic plant expressing a recombinant animal viral antigen protein, said protein being antigenic to a human or an animal.

74.

The plant of claim 73 wherein said protein is chimeric by being fused to another peptide, polypeptide or protein.

75.

The plant of claim 73 wherein said plant is a tomato plant.

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76.

~~A plasmid vector for transforming a plant comprising:~~
A DNA sequence encoding a recombinant viral antigen protein,
said protein being antigenic to a human or an
animal; and
a plant-functional promoter operably linked to said DNA
sequence which directs the expression of said
protein in said plant.

77.

The plasmid vector of claim 76 wherein said plant
promoter comprises CaMV35S.

78.

The plasmid vector of claim 76 wherein said protein is
chimeric by being fused to another peptide, polypeptide or
protein such that expression of the protein is enhanced over
levels of expression in absence of said fusion.

79.

A method for constructing a transgenic plant cell
comprising:
constructing a DNA vector by operably linking a DNA sequence
encoding a recombinant viral antigen protein to a
plant-functional promoter capable of directing the
expression of said protein in said plant;
~~transforming a plant cell with said DNA vector.~~

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80.

~~A method for producing a pharmaceutical composition comprising the steps of:
constructing a DNA vector by operably linking a DNA sequence encoding a recombinant viral antigen protein to a plant-functional promoter capable of directing the expression of said protein in said plant;
transforming a plant cell with said DNA vector; and
recovering said protein expressed in said plant cell.~~

81.

The method of claim 80 wherein said plant is a tomato plant.

82.

The method of claim 80 wherein said plant is a potato plant.

83.

A transgenic plant expressing a recombinant animal viral antigen protein, said protein expressed at a level of about .03% or more of total soluble protein.

84.

The plant of claim 83 wherein said protein is expressed at a level of about .05% or more.

85.

The plant of claim 83 wherein said protein is expressed at a level of about 0.1% or more.

86.

~~The plant of claim 83 wherein said protein is expressed at a level of about 0.2% or more of total soluble protein.~~

87.

~~The plant of claim 83 wherein said protein is expressed at a level of about 0.5% or more of total soluble protein.~~

88.

~~The transgenic plant of claim 73 said plant comprising plant tissue, wherein the plant tissue, when orally administered to the animal elicits an immune response.~~

89.

~~The transgenic plant of claim 73 said plant comprising plant tissue, wherein the viral antigen protein is expressed in the plant at a level that elicits an immune response in an animal when tissue of the plant is orally administered to the animal.~~

90.

~~The transgenic plant of claim 73 comprising plant tissue, wherein the viral antigen protein is expressed in an active form such that the viral antigen protein elicits an immune response when tissue of the plant is orally administered to the animal.~~

91.

~~The transgenic plant of claim 73 comprising plant tissue wherein at least some of the plant tissue is edible by animals.~~

92.

~~The vector of claim 76 further comprising a translational enhancing sequence.~~

93.

The vector of claim 76 wherein the DNA encoding the viral antigen protein is truncated from the native wild type DNA sequence encoding said protein.

94.

The vector of claim 76 wherein the promoter preferentially expresses the viral antigen protein in an edible portion of the plant.

95.

The method of claim 79 further comprising constructing the DNA vector with a translational enhancing sequence.

96.

The method of claim 79 further comprising truncating a wild type DNA sequence encoding a viral antigen protein to produce said DNA sequence encoding a recombinant viral antigen protein.

97.

The method of claim 80 wherein said protein is expressed in said plant in an active form such that the viral antigen protein elicits an immune response when the ~~protein is orally administered to the animal.~~